LIVE LOADS: PRIVATE ROOMS & WARDS 40 PSF RADIOLOGY, PHYSICAL THERAPY 75 PSF 100 PSF PUBLIC AREAS MECHANICAL ROOMS OR EQUIP. WT. 15 PSF PARTITIONS IN NON-PUBLIC AREAS

SUPERIMPOSED DEAD LOADS: MECHANICAL, ELECTRICAL AND CEILING 10 PSF FINISHES WHERE SHOWN ON ARCHITECTURAL AS REQUIRED

LOADINGS FOR MECHANICAL ROOMS ARE BASED ON WEIGHTS OF ASSUMED EQUIPMENT AS INDICATED BY THE MECHANICAL DOCUMENTS (INCLUDING THE WEIGHT OF CONCRETE PADS, WHERE INDICATED). ANY CHANGES IN TYPE, SIZE, OR NUMBER OF PIECES OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.

BASIC DEISGN SNOW LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2012.

GROUND SNOW LOAD, Po FLAT-ROOF SNOW LOAD, Pf SNOW EXPOSURE FACTOR, Ce SNOW LOAD IMPORTANCE FACTOR, Is THERMAL FACTOR, Cf

BASIC DESIGN WIND LOADS ARE IN ACCORDANCE WITH ASCE 7-08. DESIGN ASSUMPTIONS ARE AS FOLLOW:

MEAN RECURRENCE INTERVAL = 50 YEARS BASIC WIND SPEED = 120 MPH EXPOSURE TYPE FOR EFFECTIVE VELOCITY PRESSURE = B

SEISMIC DESIGN - THE STRUCTURE HAS BEEN DESIGNED ACCORDING TO THE INTERNATIONAL BUILDING CODE, 2012.

SEISMIC IMPORTANCE FACTOR, le SEISMIC USE GROUP 0.2 SECOND SPECTRAL ACCELERATION, Ss 1.0 SECOND SPECTRAL ACCELERATION, S1 SEISMIC DESIGN CATEGORY

### **FOUNDATION NOTES:**

SPREAD FOOTINGS ARE DESIGNED FOR THE ALLOWABLE NET SOIL BEARING PRESSURE OF 3000 PSF. GENERAL CONTRACTOR TO PROVIDE GEOTECHNICAL REPORT PER SPECIFICATIONS TO VERIFY DESIGN ASSUMPTIONS.

PROVIDE CRACK CONTROL JOINTS IN SLABS-ON-GRADE AS INDICATED BY THE SPECIFICATIONS.

DO NOT ALLOW SURFACE WATER TO ACCUMULATE AND/OR POND IN EXCAVATIONS. TEMPORARY DEWATERING SYSTEM TO BE USED DURING CONSTRUCTION WILL BE DESIGNED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT AND THE REQUIREMENTS OF THE GOVERNING BUILDING CODE.

## MISCELLANEOUS NOTES:

THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS, UNLESS NOTED OTHERWISE. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS. DO NOT SCALE THE

PRINCIPAL OPENINGS, CURBS, AND SLAB DEPRESSIONS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECH'L, ELEC'L, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, OTHER OPENINGS, AND SLAB DEPRESIONS NOT SHOWN. THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, CURBS, AND SLAB DEPRESSIONS WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. SIZE AND LOCATION OF OPENINGS SHALL BE VERIFIED WITH THE MECHANICAL CONTRACTOR. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL

THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCH'L, MECH'L, ELEC'L, PLUMBING, AND CIVIL DRAWINGS TO CONFIRM ALL REQUIREMENTS OF THE WORK. REPORT ANY CONFLICT/DISCREPANCY BETWEEN THE DISCIPLINES TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL ELEMENTS.

5. THE HORIZONTAL AND VERTICAL DIMENSIONS OF EXISTING STRUCTURES SHALL BE VERIFIED BEFORE WORK IS BEGUN. ANY VARIATION BETWEEN DIMENSIONS SHOWN AND EXISTING DIMENSIONS SHALL BE REPORTED TO THE ARCHITECT.

THE CONTRACTOR SHALL INSURE THAT CONSTRUCTION LOADS DO NOT EXCEED THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PUT ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT THE CONCRETE REACHES THE FULL DESIGN STRENGTH AND ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.

PROVIDE CHAMFERS AS SPECIFIED AND/OR DETAILED ON THE ARCHITECTURAL DRAWINGS. CHAMFERS HAVE NOT BEEN SHOWN ON THE STRUCTURAL DRAWINGS.

# **CONCRETE NOTES:**

A. CAST IN PLACE CONCRETE:

1. CLASSES OF CONCRETE SHALL BE AS FOLLOWS:

CLASSES OF CONCRETE									
LOCATION	28 DAY F'c (psi)	CONC. TYPE	MAX. NOM. COARSE AGG. SIZE						
ALL CONC. U.N.O.	3,000	N.W.C.	1 1/2"						
SLAB ON GRADE	3,500	N.W.C.	1 1/2"						
PILASTER, WALLS	4,000	N.W.C.	1 1/2"						
TOPPING SLABS	4,000	N.W.C.	3/4"						

N.W.C. DENOTES NORMAL WEIGHT CONCRETE WITH A MAX. DRY DENSITY = 150 PCF

2. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS NOTED BELOW. SEE SECTION 7.7, ACI 318-10 FOR CONDITIONS NOT NOTED.

CONCRETE PROTEC	CTION				
WALL FOOTINGS, COLUMN FOOTINGS, AND OTHER CONCRETE PLACED AGAINST SOIL	3"				
WALLS	1.5" BACKFILLED SIDES 2" NON-BACKFILLED SIDES				
SLABS-ON-GRADE	3" BOTTOM (MINIMUM) 1" TOP				
TOPPING SLABS	1.5" TOP				

HORIZONTAL CONSTRUCTION JOINTS SHALL BE PERMITTED ONLY WHERE SHOWN ON THE STRUCTURAL DRAWINGS.

### **CONCRETE REINFORCEMENT NOTES:**

LONGITUDINALLY IN BEAMS DIRECTLY BELOW THE STIRRUPS.

#### REINFORCING STEEL

CONCRETE REINFORCING BARS SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60, EXCEPT AS NOTED. FIELD BENT #3 DOWELS MAY BE ASTM A615, GRADE 40. REINFORCEMENT REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706,

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. THE FOLLOWING WELDED WIRE FABRIC SHALL BE USED FOR AREAS SPECIFIED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS: 5 INCH SLAB-ON-GRADE 6 X 6 - W2.9 X W2.9 NON-STRUCTURAL TOP'G SLABS 6 X 6 - W1.4 X W1.4

HEADED STUDS AND DEFORMED BAR ANCHORS USED IN FABRICATION OF EMBEDDED ASSEMBLIES SHALL BE WELDED TO THOSE ASSEMBLIES USING A FULL FUSION PROCESS.

FOR ADDITIONAL WWF, IF ANY, SEE FLOOR FRAMING PLANS.

REINFORCING BARS MAY BE SPLICED ONLY AS SHOWN ON THE DRAWINGS EXCEPT THAT REINFORCING DESIGNATED AS "CONTINUOUS" SHALL HAVE A CLASS "B" LAP SPLICE (ACI 318-08, SECTION 12.15.1). LAP SPLICES OF CONTINUOUS REINFORCING SHALL BE MADE OVER SUPPORTS FOR BOTTOM BARS AND FOR INTERMEDIATE BARS AND AT MIDSPAN FOR TOP BARS. AT EXTERIOR SUPPORTS, TOP AND BOTTOM BARS SHALL BE HOOKED AND INTERMEDIATE BARS SHALL EXTEND TO WITHIN 2" OF EXTERIOR FACE.

INTERSECTIONS AS SHOWN ON TYPICAL WALL CORNER BAR PLACING DETAILS. f. LAPS IN WELDED WIRE FABRIC SHALL BE TWO MESH AT SPLICES.

HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS AT CORNERS AND

PROVIDE STANDARD BAR CHAIRS WITH PROTECTIVE TIPS AND SPACERS SPACED AS REQUIRED TO PROVIDE SPECIFIED CONCRETE PROTECTION FOR REINFORCEMENT BUT NOT TO EXCEED 3'-0" ON CENTER FOR SLABS, BEAMS, AND GRADE BEAMS. PLACE BAR CHAIRS

### STEEL NOTES:

A. STRUCTURAL STEEL

1. STRUCTURAL STEEL CONSTRUCTION HAS BEEN DESIGNED IN ACCORDANCE WITH A.I.S.C. "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", 2005, U.N.O.

STRUCTURAL STEEL SHAPES, PLATES, ETC., SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS, U.N.O. FLOOR/ROOF BEAMS AND GIRDERS EXCLUDING W8X10 AND SMALLER

> CHANNELS, TEES, ANGLES, BARS, PLATES, ASTM A36 W8X10 AND SMALLER BEAMS STEEL TUBING (TS SECTIONS) ASTM A500-GR. B (Fy = 46 KSI)

CONNECTION BOLTS SHALL CONFORM TO ASTM A325. USE BEARING TYPE BOLTS WITH THREAD ALLOWED ACROSS THE SHEAR PLANE (TYPE N) AT TYPICAL BEAM SHEAR CONNECTIONS, U.N.O. USE TYPE "SC" BOLTS WITH EITHER DIRECT TENSION INDICATOR OR LOAD INDICATOR WASHERS AT ALL BOLTED SLIP CRITICAL CONNECTIONS.

ASTM A449

4. A LISTING OF CONNECTIONS CONSIDERED "SLIP CRITICAL" IS AS FOLLOWS:

ANCHOR BOLTS

#### BOLTED CONNECTIONS OF TENSION MEMBERS. BOLTS USED IN MOMENT CONNECTIONS. BOLTED SPLICES OF TRUSS TOP AND BOTTOM CHORDS.

STEEL BEAM CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY THE STRUCTURAL STEEL FABRICATOR. BEAM CONNECTIONS SHALL DEVELOP THE END REACTIONS GIVEN ON THE DRAWINGS. WHERE END REACTIONS ARE NOT SPECIFIED, THE BEAM CONNECTION SHALL DEVELOP 50% OF THE BEAMS WEB ALLOWABLE SHEAR CAPACITY. A MINIMUM CONNECTION CAPACITY OF 12 KIPS SHALL B PROVIDED FOR ALL BEAMS, UNLESS NOTED OTHERWISE BY SPECIFIED REACTION.

THE STRUCTURAL STEEL FABRICATOR SHALL PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF THE PROJECT, THAT THE CONNECTION DESIGN IS IN ACCORDANCE WITH ALL APPLICABLE CODES AND SPECIFICATIONS.

- 6. FOR ALL HIGH STRENGTH BOLTS, HARDENED WASHERS SHALL BE PROVIDED.
- GALVANIZING OF STEEL MEMBERS SHALL CONFORM TO ASTM A123.

HEADED STUDS AND DEFORMED BAR ANCHORS USED IN FABRICATION OF EMBEDDED ASSEMBLIES SHALL BE WELDED TO THOSE ASSEMBLIES USING A FULL FUSION PROCESS.

9. STEEL BEAMS SHALL BE ERECTED WITH NATURAL CAMBER UP.

10. ANCHOR BOLTS HAVE NOT BEEN DESIGNED FOR ANY SPECIFIC ERECTION FORCES. THE ERECTOR IS RESPONSIBLE FOR ANY AND ALL BRACING REQUIRED TO ERECT THE BUILDING.

COMPOSITE BEAMS USING CONCRETE SLAB AS COMPRESSION FLANGE ARE DESIGNED FOR UNSHORED CONSTRUCTION. THE ANTICIPATE UP TO 5/8" DEFLECTION UNDER WET WEIGHT OF CONCRETE FOR BEAMS WHICH HAVE NO CAMBER SHOWN ON THE STRUCTURAL DRAWINGS.

TO STEEL BEAMS AND ANCHORED TO MASONRY OR CONCRETE WALLS AT THE ENDS, U.N.O. 13. THE RESPONSIBILITY FOR ANY TEMPORARY SHORING OR BRACING DURING THE CONSTRUCTION PHASE BEFORE COMPLETION OF

OPEN WEB STEEL JOISTS AND BRIDGING SHALL CONFORM TO THE STANDARDS OF THE STEEL JOIST INSTITUTE. BRIDGING SHALL BE

CONNECTION AND POURING OF FLOOR SLAB IS ADDRESSED IN THE SPECIFICATIONS AND IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. IF NOT SHOWN ON DRAWINGS, SUPPORT OF METAL DECK AROUND COLUMN CLOSURE, SCREED PLATES AROUND THE OPENINGS AND EDGE SLAB SHALL BE PROVIDED BY THE CONTRACTOR.

DURING CONSTRUCTION, THE ERECTED STRUCTURAL STEEL SHALL NOT PROCEED HIGHER THAN THE CONCRETE CORE CONSTRUCTION. THE CONTRACTOR SHALL MAKE SAFE PROVISIONS FOR STABILIZING THE STEEL STRUCTURE BOTH HORIZONTALLY AND VERTICALLY. THE STABILITY OF THE FRAME DURING ERECTION IS THE CONTRACTOR'S RESPONSIBILITY.

WELDED CONSTRUCTION SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" D1.1; AWS D1.3-SHEET STEEL; AND AWS D1.4 "REINFORCING STEEL WELDING CODE".

ELECTRODES FOR FIELD AND SHOP WELDS OF STRUCTURAL STEEL SHALL BE E70XX, U.N.O.

ELECTRODES FOR WELDING OF SHEET STEEL SHALL CONFORM TO AWS D1.3.

- ELECTRODES FOR WELDING OF REINFORCING STEEL SHALL BE E80XX.
- WHEN WELDS ARE NOT CALLED-OUT ON DRAWINGS, THEY ARE MINIMUM SIZE CONTINUOUS FILLET WELDS IN ACCORDANCE WITH AWS D1.1. FILLET WELDS NOT SPECIFIED AS TO LENGTH SHALL BE CONTINUOUS.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL GROOVE WELDS SHALL BE FULL PENETRATION.
- ONLY LOW HYDROGEN ELECTRODES SHALL BE USED ON REINFORCING STEEL AND ASTM A992 STEEL.

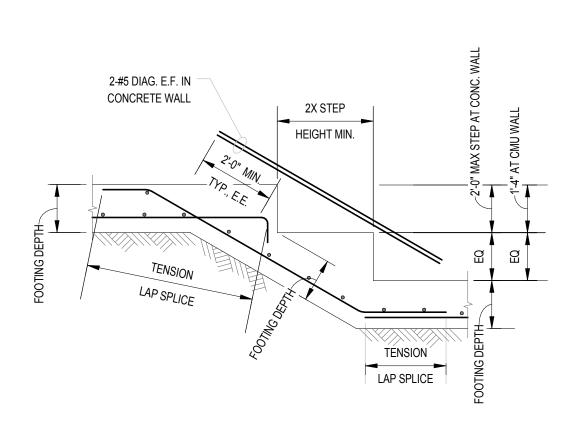
PROVIDE FILLET WELDS AT ALL CONTACT JOINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE OF THE SMALLER MEMBER AT THE JOINT UNLESS DETAILED OTHERWISE ON THE DRAWINGS.

METAL DECK SHALL BE GALVANIZED AND SHALL BE PLACED WITH CONTINUOUS SPANS OF THREE OR MORE WHERE POSSIBLE. IN NO CASE

WELD DECK TO SUPPORTING MEMBERS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. DECK AND WELDS SHALL HAVE A MINIMUM

3. DECK UNITS SHALL BE LAPPED ONLY OVER SUPPORTS.

SP = .139 IN3/FT. SN = .147 IN3/FT.



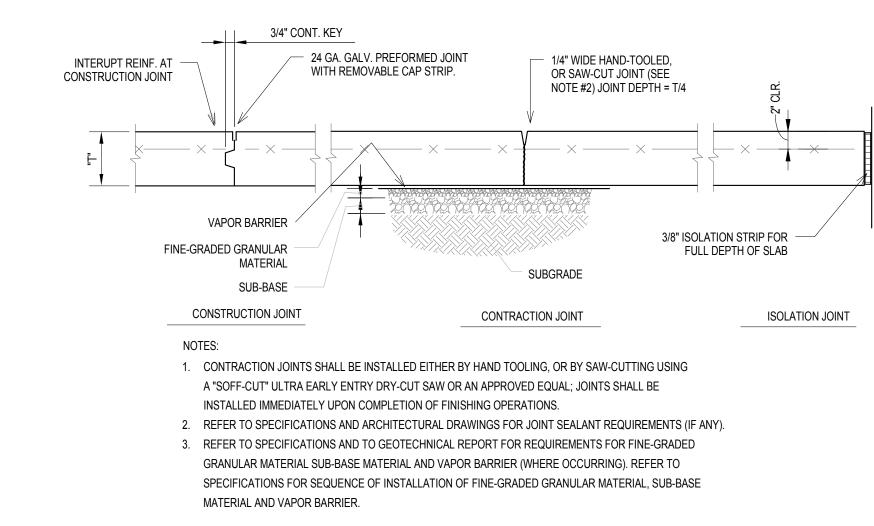
f'c	SPLICE CLASS	BAR SIZE									
10	SELICE CLASS	#3	#4	#5	#6	#7	#8				
2000	CLASS A 1.0 Ld	13	17	21	27	37	49				
3000	CLASS B 1.3 Ld	17	22	27	35	48	64				
4000	CLASS A 1.0 Ld	12	15	18	24	32	42				
4000	CLASS B 1.3 Ld	16	20	23	31	42	55				
	CLASS A 1.0 Ld	12	13	16	21	29	38				
5000	CLASS B 1.3 Ld	16	17	21	27	38	49				
6000	CLASS A 1.0 Ld	12	12	15	19	26	35				
0000	CLASS B 1.3 Ld	16	16	20	25	34	46				

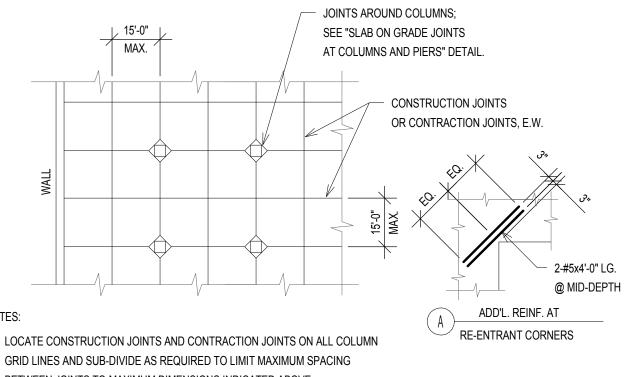
1. USE THE ABOVE DEVELOPMENT LENGTH AND LAP SPLICE TABLE FOR BEAMS, JOISTS, COLUMNS, WALLS, SLABS, ETC. WHEN THE CLEAR SPACE BETWEEN BARS IS

- GREATER THAN 2 BAR DIAMETERS. 2. WHEN THE CLEAR SPACE BETWEEN BARS IS LESS THAN OR EQUAL TO 2 BAR DIAMETERS,
- MULTIPLY DEVELOPMENT AND SPLICE LENGTHS LISTED IN TABLE BY 1.43. 3. TENSION DEVELOPMENT LENGTH = Ld. LENGTHS LISTED IN TABLE ARE IN INCHES. 4. PROVIDE LAP SPLICE LENGTH BASED ON THE LARGER BAR BEING LAPPED WHEN
- BARS OF DIFFERENT SIZES ARE LAP SPLICED. 5. FOR TOP BARS, MULTIPY THE DEVELOPMENT AND SPLICE LENGTHS BY 1.3.
- TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

TENSION DEVELOPMENT AND LAP SPLICE LENGTH FOR N.W.C. (INCHES)

6 TOPPING SLAB 1/2" = 1'-0"



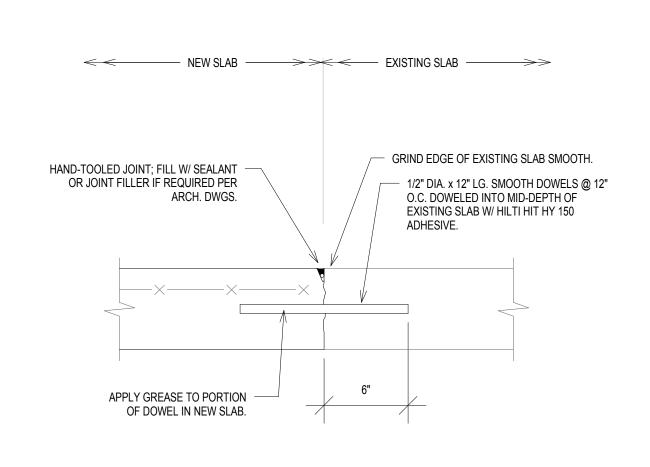


1. LOCATE CONSTRUCTION JOINTS AND CONTRACTION JOINTS ON ALL COLUMN GRID LINES AND SUB-DIVIDE AS REQUIRED TO LIMIT MAXIMUM SPACING BETWEEN JOINTS TO MAXIMUM DIMENSIONS INDICATED ABOVE. 2. LOCATE JOINTS IN A PATTERN THAT SUB-DIVIDES SLAB INTO PANELS

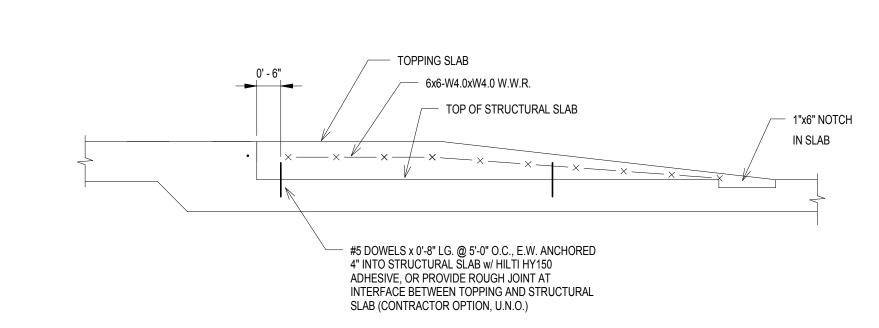
THAT ARE SQUARE OR RECTANGULAR AND THAT HAVE AN ASPECT RATIO BETWEEN 1.0 (PREFERRED) TO 1.5. 3. PROVIDE JOINTS AT ALL RE-ENTRANT CORNERS OR PROVIDE REINFORCING

PER DETAIL "A" AT RE-ENTRANT CORNERS WHERE JOINTS CAN NOT OCCUR.

SLAB ON GRADE JOINT ARRANGEMENT



NEW SLAB ON GRADE CONNECTION TO EXISTING SLAB ON GRADE



6x6-W4.0xW4.0 W.W.R. @ MID-DEPTH FOR TYPE 1

#5@9" E.W. CONT. @ MID-DEPTH FOR TYPE 1A

RIGID INSULATION WHERE TOPPING SLAB IS HIGHER THAN 4" ABOVE STRUCTURAL SLAB; INSULATION SHALL BE OWENS

COMPRESSIVE STRENGTH = 40 PSI (PER ASTM D1621), MIN. REQUIRED COMPRESSIVE MODULUS = 1400 PSI (PER ASTM D1621),

CORNING FOAMULAR 400 HIGH DENSITY EXTRUDED POLYSTYRENE INSULATION OR APPROVED EQUAL; MIN. REQUIRED

MIN. REQUIRED INSULATION FOUNDATION MODULUS "K" = 300 PCI; REFER TO ARCH. DWGS. AND SPECIFICATIONS FOR

INSULATION THICKNESS AND ADDTIONAL INFORMATION AND REQUIREMENTS.

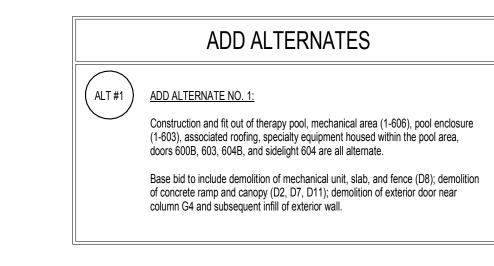
1"x6" NOTCH

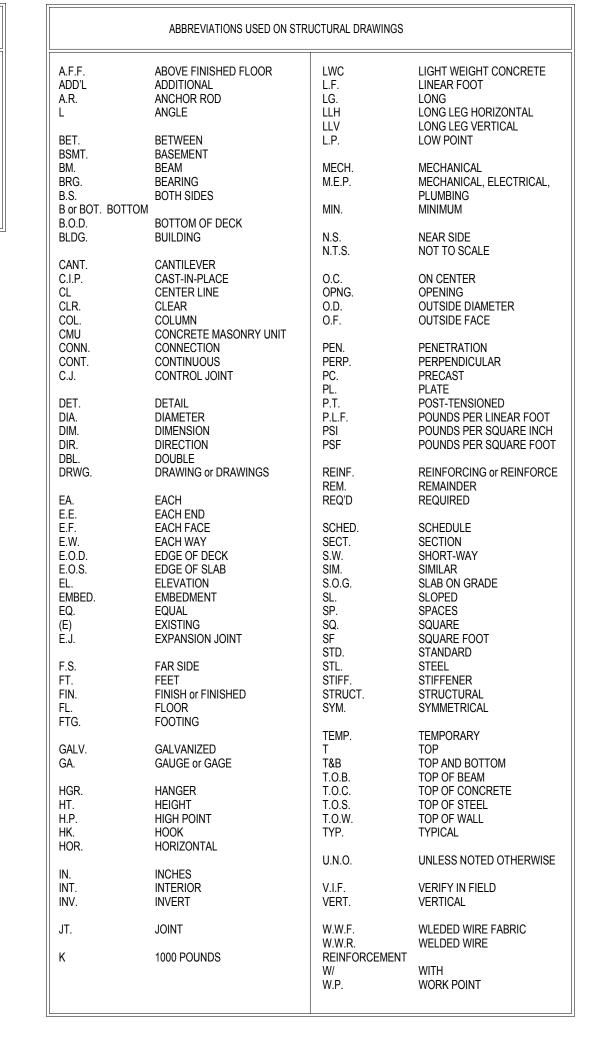
IN SLAB

#4x1'-0" DOWELS @ 1'-6" O.C. IN EA. RIB ANCHORED 4" INTO SLAB

TOP OF

STRUCTURAL SLAB





# METAL DECK NOTES:

SHALL UNSHORED METAL DECK SPANS EXCEED THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS OR DEFLECTION CRITERIA OF SPAN DIVIDED

ROOF DECK SHALL BE WIDE RIBBED WITH THE FOLLOWING MINIMUM PROPERTIES: I = .150 IN4/F

# **FULLY SPRINKLERED**

Office of

Department of Veterans Affairs

	CONSULTANTS:						PROJECT MANAGER:  Project Number 3619  Scale As indicated			Drawing Title GENERAL NOTES AND TYPICAL DETAILS	Project Title BUILDING 69 PM & R RENOVATION			/A Project Number 542-CSI-203			
	BRAY MOONEY	ARRAY HEALTHCARE			Civil Engineer GUIDON DESIGN	Fire Protection Consultant HARRINGTON	<b>BRAY MOONEY</b>	Aquatic Consultant ATLANTIC	Bray						В	Building Number 69	
		FACILITIES SOLUTIONS	CONSULTING ENGINEERS	CONSULTING GROUP		GROUP	CONSULTING	AQUATIC ENGINEERING	Mooney			Approved: Project Director	Location 1400 Black Hc	rse Hill, Coatesville		Drawing Number	\
	CHESTER, PA, 19013	2520 RENAISSANCE BLVD., SUITE 110 KING OF PRUSSIA, PA, 19406 Tel (610) 270-0599	P.O. BOX 24 40 LITTLE ROAD ZIEGLERVILLE, PA, 19492 Tel (610) 287-3194	7330 CHAPEL HILL ROAD, SUITE 202 RALEIGH, NC, 27606 Tel (919) 858-7420	2453 N DELAWARE STREET INDIANAPOLIS, IN 46205 Tel (317) 800-6388	7508 E. INDEPENDENCE BLVD., SUITE 116 CHARLOTTE, NC, 28277 Tel (704) 531-9077	CHESTER, PA, 19013	1823 DEEP RUN ROAD PIPERSVILLE, PA, 18947 Tel (215) 766-0409	Consulting				Date 1/22/2014	Checked Draw		S001	
Revisions Date									0				1/22/2014	RAZ	NEW		

0' - 4"

4'-0" MAX., E.W.